components are identified by the same reference numerals as in the first embodiment, and like descriptions will not be repeated. Each layer and each member are drawn in a different scale in each drawing so as to be large enough to be visible.

[0073] As shown in **FIGS. 8 and 9**, a touch panel **50** has a flat lower substrate **51** and a flat upper substrate **52** opposing each other with a predetermined spacing therebetween. Inner surfaces of the lower substrate **51** and the upper substrate **52** respectively have a lower transparent electrode **55** and an upper transparent electrode **56**, formed on substantially the entire surfaces corresponding to at least an input area by a finger, a pen, or the like. The lower transparent electrode **55** and the upper transparent electrode **56** are respectively provided with pluralities of projections **61** and **62** in a respectively predetermined pattern.

[0074] Because the lower substrate **51** and the upper substrate **52**, and the lower transparent electrode **55** and the upper transparent electrode **56** are made of the same materials as the corresponding ones in the first embodiment, descriptions about the materials will not be repeated. Similarly to the first embodiment, the upper substrate **52** and the lower substrate **51** of the touch panel **50** are assumed to lie at the operator side and the display device side, respectively.

[0075] The projections **61** and **62** respectively formed on the inner surfaces of the lower transparent electrode **55** and the upper transparent electrode **56** are configured to have the similar shape and pattern as the projections formed on the inner surfaces of the substrates in the first embodiment.

[0076] That is, as shown in **FIG. 8**, each of the projections **61** and **62** can be formed as a truncated quadrangular pyramid, similarly to the projections in the first embodiment. Reference numerals **61**A and **62**A respectively represent the bottoms of the projections **61** and **62**, and reference numerals **61**B and **62**B respectively represent the tops of the projections **61** and **62**. The cross-sectional area of each of the projections **61**, parallel to the outer surface of the lower substrate **51**, is formed to decrease continuously from the bottom **61** A to the top **61**B of the projection **61**. The same applies to the combination of each of the projections **62** of the upper substrate **52**, and the bottom **62**A and the top **62**B of the projection **62**.

[0077] The bottom **61**A of the projection **61** lies on the display device side (the lower side shown in the drawing) and the top **61**B of the projection **61** lies on the operator side (the upper side shown in the drawing). On the other hand, the bottom **62**A of the projection **62** lies on the operator side (the upper side shown in the drawing) and the top **62**B of the projection **62** lies on the display device side (the lower side shown in the drawing).

[0078] As shown in **FIG. 8**, the projections **61** and **62** are arranged on the inner surfaces of the lower transparent electrode **55** and the upper transparent electrode **56**, respectively, in a substantially periodical manner in three directions shown in the drawing; the vertical and horizontal directions which are orthogonal to each other, and the diagonal direction, thus being in a substantially matrix configuration as a whole, similarly to the projections in the first embodiment.

[0079] Similarly to the projections in the first embodiment, pitches **P4**, **P5** and **P6** of the projections **61** and **62** in the horizontal, vertical, and diagonal directions shown in the drawing are arranged to be shorter than any wavelength of visible light. The pitches **P4**, **P5** and **P6** of the projections **61** and **62** are preferably equal to or shorter than about one fifth of the shortest wavelength of visible light, that is, about 450 nm. The shorter the pitches **P4**, **P5** and **P6** of the projections **61** and **62**, the better, however, the pitches **P4**, **P5** and **P6** of the projections **61** and **62** are preferably arranged to range from 10 to 100 nm since pitches shorter than 10 nm cause the fabrication step of the projections **61** and **62** to become more complicated. Though illustrated in an exaggerated manner, the pitches **P4**, **P5** and **P6** of the projections **61** and **62** are extremely small, i.e., on the order of nanometers, while the distance between the lower transparent electrode **55** and the upper transparent electrode **56** is on the order of micrometers.

[0080] In the second embodiment, as described above, the lower transparent electrode **55** having the large number of fine projections **61** arranged with the substantially periodical pitches **P4**, **P5**, and **P6** shorter than any wavelength of visible light is formed on the inner surface of the flat lower substrate **51**. The same applies to the combination of the upper transparent electrode **56**, the upper substrate **52**, and the large number of projections **62**.

[0081] Thus, projections and depressions having a predetermined shape are also formed on the inner surface of the lower transparent electrode **55** with the substantially periodical pitches **P4**, **P5**, and **P6** shorter than any wavelength of visible light. The same applies to the combination of the upper transparent electrode **56** and the large number of fine projections **62**. With this structure, the light reflection and diffraction at the boundary between the air space **13** and the lower transparent electrode **55** and at the boundary between the air space **13** and the upper transparent electrode **56** can be reduced, thereby providing the analog resistive contact-type touch panel **50** having high light transmittance.

[0082] According to the second embodiment, the lower transparent electrode **55** and the upper transparent electrode **56** are provided with the projections **61** and **62**, respectively. Accordingly, both kinds of light reflection decrease: one for light incident from the operator side and reflected at the surface of the lower transparent electrode **55**, and the other for light emitted from the display device side and reflected at the surface of the upper transparent electrode **56**.

[0083] When the projections **61** and **62** are formed only in one direction in a substantially periodical manner, polarized light travelling orthogonal to the direction does not see the periodic structure of the projections **61** and **62**. That is, the reflection and diffraction of the polarized light are not reduced at the boundary between the air space **13** and the lower transparent electrode **55** and at the boundary between the air space **13** and the upper transparent electrode **56**. In the second embodiment, however, the reflection and diffraction of all visible light at the boundary between the air space **13** and the lower transparent electrode **55** and at the boundary between the air space **13** and the upper transparent electrode **56** can be reduced by arranging the projections **61** and **62** in a substantially periodical manner in three directions including two mutually orthogonal directions.

[0084] Further, in the second embodiment, each of the projections **61** can be formed such that the cross-sectional area of the projection **61**, parallel to the surface of the lower